

What is claimed is:

1. A system for editing, comparing, and resolving equations comprising:  
a communications network;  
at least one teacher computer; and  
a plurality of student computers,  
wherein each student computer is operably connected to each teacher computer via the communications network, wherein each teacher computer includes an input device, a display, and a computer-readable storage medium containing program instructions for implementing a teacher equation editor application, and wherein each student computer includes an input device, a display, a computer-readable storage medium containing program instructions for implementing a student equation editor application.

2. The system of claim 1 wherein the teacher equation editor application comprises one or more program instructions for implementing a communications protocol, wherein the communications protocol controls communication between the teacher computer and the plurality of student computers via the communications network.

3. The system of claim 1 wherein the teacher equation editor application comprises one or more program instructions for performing the steps of:

receiving a question description via the input device;

storing the question description;

receiving one or more answers corresponding to the question description via the input device, wherein each answer includes one or more of an equation and an expression; and

storing the one or more answers.

4. The system of claim 3 wherein the input device for the teacher computer comprises a pointing device.

5. The system of claim 3 wherein the input device for the teacher computer comprises a keyboard.

6. The system of claim 3 wherein storing the question description comprises storing the question description in the computer-readable storage medium of the teacher computer.

7. The system of claim 3 wherein storing the question description comprises storing the one or more answers in the computer-readable storage medium of the teacher computer.

8. The system of claim 3 wherein the teacher equation editor application further comprises one or more program instructions for transmitting the question description to each student computer via the communications network.

9. The system of claim 3 wherein the teacher equation editor application further comprises one or more program instructions for performing the steps of:

receiving a response from one of the plurality of student computers via the communications network; and

comparing the response with the one or more answers corresponding to the question description.

10. The system of claim 9 wherein at least one response is received in a rendered format.
11. The system of claim 9 wherein the response is received in a character syntax.
12. The system of claim 11 wherein comparing the response comprises rendering the response from the character syntax into a rendered expression.
13. The system of claim 12 wherein the teacher equation editor application further comprises one or more program instructions for displaying the rendered expression on the display of the teacher computer.
14. The system of claim 9 wherein the teacher equation editor application further comprises one or more program instructions for performing the steps of:
  - if the response is equal to at least one answer, storing an indication that the response is correct; and
  - if the response is not equal to at least one answer, storing an indication that the response is incorrect.
15. The system of claim 9 wherein the teacher equation editor application further comprises one or more program instructions for generating a learning reinforcement signal.

16. The system of claim 15 wherein the teacher equation editor application further comprises one or more program instructions for transmitting a learning reinforcement signal to the student computer.

17. The system of claim 16 wherein the reinforcement signal is transmitted at substantially the same time as the comparison of the response with the one or more answers completes.

18. The system of claim 1 wherein the teacher equation editor application comprises a web browser application.

19. The system of claim 1 wherein the student equation editor application comprises one or more program instructions for performing the steps of:

receiving a question description via the communications network;

displaying the question description on the display corresponding to the student computer; and

receiving one or more responses to the question description via the input device, wherein each response includes one or more of an equation or an expression.

20. The system of claim 19 wherein the input device for the student computer comprises a pointing device.

21. The system of claim 19 wherein the input device for the student computer comprises a keyboard.
22. The system of claim 19 wherein at least one response is received in a character syntax.
23. The system of claim 19 wherein at least one response is received in a rendered format.
24. The system of claim 19 wherein the student equation editor application further comprises one or more program instructions for transmitting at least one response to the teacher computer via the communications network.
25. The system of claim 24 wherein transmitting at least one response occurs at substantially the same time as the at least one response is received via the input device.
26. The system of claim 24 wherein the at least one response is transmitted in a character syntax.

27. The system of claim 19 wherein the student equation editor application further comprises one or more program instructions for performing the steps of:

receiving one or more answers corresponding to the question description via the communications network; and

comparing each response with the one or more answers corresponding to the question description.

28. The system of claim 27 wherein the student equation editor application further comprises one or more program instructions for performing the steps of:

generating at least one learning reinforcement signal; and

displaying the at least one learning reinforcement signal on the display corresponding to the student computer display.

29. The system of claim 28 wherein generating at least one reinforcement signal occurs at substantially the same time as at least one response to the question description is received.

30. The system of claim 19 wherein the student equation editor application further comprises one or more program instructions for performing the steps of:

receiving at least one learning reinforcement signal from the teacher computer via the communications network; and

displaying the at least one learning reinforcement signal on the display corresponding to the student computer.

31. The system of claim 1 wherein the student equation editor application comprises a web browser application.

32. A system for editing, comparing, and resolving equations comprising:

- a communications network;
- at least one teacher computer;
- a plurality of student computers; and
- a comparison device,

wherein each student computer, each teacher computer and the comparison device are operably interconnected via the communications network, wherein each teacher computer includes an input device, a display, and a computer-readable storage medium containing program instructions for implementing a teacher equation editor application, wherein each student computer includes an input device, a display, a computer-readable storage medium containing program instructions for implementing a student equation editor application, and wherein the comparison device includes a computer-readable storage medium.

33. The system of claim 32 wherein the teacher equation editor application comprises one or more program instructions for implementing a communications protocol, wherein the communications protocol controls communication between the at least one teacher computer, the plurality of student computers and the comparison device via the communications network.

34. The system of claim 32 wherein the teacher equation editor application comprises one or more program instructions for performing the steps of:

receiving a question description via the input device;

storing the question description;

receiving one or more answers corresponding to the question description via the input device, wherein each answer includes one or more of an equation and an expression; and

storing the one or more answers.

35. The system of claim 34 wherein the input device for the teacher computer comprises a pointing device.

36. The system of claim 34 wherein the input device for the teacher computer comprises a keyboard.

37. The system of claim 34 wherein storing the question description comprises storing the question description in the computer-readable storage medium of the teacher computer.

38. The system of claim 34 wherein storing the one or more answers comprises storing the one or more answers in the computer-readable storage medium of the teacher computer.



39. The system of claim 34 wherein storing the question description comprises storing the question description in the computer-readable storage medium of the comparison device.

40. The system of claim 34 wherein storing the one or more answers comprises storing the one or more answers in the computer-readable storage medium of the comparison device.

41. The system of claim 34 wherein the teacher equation editor application further comprises one or more program instructions for transmitting the question description to each student computer via the communications network.

42. The system of claim 34 wherein the comparison device includes a comparison application comprising one or more program instructions for performing the steps of:

receiving a response from one of the plurality of student computers via the communications network; and

comparing the response with the one or more answers corresponding to the question description.

43. The system of claim 42 wherein at least one response is received in a rendered format.

44. The system of claim 42 wherein the response is received in a character syntax.

45. The system of claim 44 wherein comparing the response comprises rendering the response from the character syntax into a rendered expression.

46. The system of claim 42 wherein the teacher equation editor application further comprises one or more programming instructions for performing the steps of:

receiving the response;

rendering the response into a rendered expression; and

displaying the rendered expression on the display of the teacher computer.

47. The system of claim 42 wherein the comparison application further comprises one or more program instructions for performing the steps of:

if the response is equal to at least one answer, storing an indication that the response is correct; and

if the response is not equal to at least one answer, storing an indication that the response is incorrect.

48. The system of claim 42 wherein the comparison application further comprises one or more program instructions for transmitting a learning reinforcement signal to the student computer.

49. The system of claim 48 wherein the reinforcement signal is transmitted at substantially the same time as the comparison of the response with the one or more answers completes.

50. The system of claim 32 wherein the teacher equation editor application comprises a web browser application.

51. The system of claim 32 wherein the student equation editor application comprises one or more program instructions for performing the steps of:

receiving a question description via the communications network;

displaying the question description on the display corresponding to the student computer; and

receiving one or more responses to the question description via the input device, wherein each response includes one or more of an equation and an expression.

52. The system of claim 51 wherein the input device for the student computer comprises a pointing device.

53. The system of claim 51 wherein the input device for the student computer comprises a keyboard.

54. The system of claim 51 wherein at least one response is received in a character syntax.

55. The system of claim 51 wherein at least one response is received in a rendered format.

56. The system of claim 51 wherein the student equation editor application further comprises one or more program instructions for transmitting at least one response to the comparison device via the communications network.

57. The system of claim 56 wherein transmitting at least one response occurs at substantially the same time as the at least one response is received via the input device.

58. The system of claim 56 wherein the at least one response is transmitted in a character syntax.

59. The system of claim 51 wherein the student equation editor application further comprises one or more program instructions for receiving at least one learning reinforcement signal from the comparison device via the communications network.

60. The system of claim 32 wherein the student equation editor application comprises a web browser application.

61. A method of editing, comparing and resolving equations comprising:  
receiving a question description on a teacher computer system;  
receiving one or more answers on a teacher computer system, wherein each answer comprises one or more of an equation and an expression; and  
transmitting the question description to a plurality of student computer systems.
62. The method of claim 61, further comprising:  
receiving a plurality of responses, wherein at least one response is received from each of the plurality of student computer systems; and  
determining, for each response, if the response matches at least one answer.
63. The method of claim 62, further comprising:  
transmitting at least one learning reinforcement to the second computer system associated with the response, wherein the at least one learning reinforcement is determined by whether the response matches at least one answer.
64. A method of editing, comparing, and resolving equations comprising:  
receiving a question description on a student computer system from a teacher computer system;  
displaying the question description;  
receiving at least one response to the question description, wherein each response comprises one or more of an equation and an expression; and  
transmitting the at least one response to the teacher computer system.

65. The method of claim 64, further comprising:  
receiving at least one learning reinforcement from the teacher computer system.